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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/611,934 | 07/03/2003 | Sadao Kanbe | 45360 | 3959 |

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| EXAMINER | |
|---|---|
| HAIDER, SAIRA BANO | |
| ART UNIT | PAPER NUMBER |
| 1711 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
| 3 MONTHS | 04/16/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/611,934 | KANBE ET AL. | |
| | Examiner | Art Unit | |
| | Saira Haider | 1711 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *11 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *9-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Information Disclosure Statement*

1. Applicant has not provided the English Abstract for the Japanese Foreign Patent Documents crossed out in the IDS statement filed 7/3/2003, thus those documents have not been considered.

### *Product-by-Process Claims*

2. Claims 12 and 13 are recognized as product-by-process claims, wherein even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Wherein the claimed product appears to be the same or similar to that of the prior art, although produced by a different process. The examiner has provided a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi,* 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

### *Claim Rejections - 35 USC § 103*

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 9, 10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US 6017584) in view of Liang et al. (US 2002/0131152).

5. Albert discloses encapsulated electrophoretic displays and materials useful in fabricating such displays. Specifically, Albert discloses the formation of a composition comprising microcapsules and an aqueous binder. Electrophoretic particles dispersed within a suspending, or electrophoretic, fluid are encapsulated in the shell of the microcapsules (Abstract, Example 1, D, 2). Albert discloses a variety of suitable electrophoretic particles, such as titania (col. 12, line 54 to col. 15, line 60). Albert discloses a variety of suitable suspending fluids, such as organic solvents, specifically aromatic hydrocarbons, such as, toluene (col. 16, line 39). Albert discloses a variety of suitable microcapsule shell materials which encapsulate the particles and the suspending fluid (col. 19, lines 31 to col. 21, line 21). Albert discloses that a variety of additional aqueous binders can be added to the microcapsule composition in order to make the composition suitable for coating (col. 22, lines 14 to col. 23, lines 29).

6. Albert exemplifies that the microcapsule content in the microcapsule composition is 5 parts capsules, 1 part the first aqueous solution and 1 part the second aqueous solution, thus the amount of microcapsules present in the composition is (5 parts capsules/7 total parts composition), i.e. 71.4 wt %, hence meeting the claimed limitation (Example 1, see col. 24, lines 43-49). Albert exemplifies that the microcapsule composition is comprised solely of the microcapsules and the aqueous binder, hence the total content is considered 100 wt% (Example 1, D, 2). Albert discloses that the microcapsule diameter is between 5 and about 200 μm (col. 3, lines 37-38).

7. The Albert reference fails to explicitly disclose the exact values of the particle distribution by volume, as claimed. However, Albert discloses that one skilled in the art will select an encapsulation procedure and wall material based on the desired capsule properties. These properties include the

distribution of capsule radii, in addition to other properties (col. 20, lines10-16). Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention to select a particular encapsulation procedure to ensure that the distribution of the capsules falls within the claimed range.

8. Additionally, attention is directed towards the Liang et al. reference, which teaches that he size distribution of the microcapsules prepared via the process of Albert is broad, resulting in poor resolution and addressability for color applications [0007]. Thus, it would have been obvious to one of ordinary skill in the art to narrow the microcapsule size distribution of Albert in order to improve the resolution and addressability for color applications in electrophoretic displays. Wherein it would have been obvious to one of ordinary skill in the art to optimize the size distribution; it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

9. Clearly, Ling et al. recognizes the size distribution of microcapsules in electrophoretic displays as a result effective variable because changing it will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to modify the particle diameter distribution by volume to values within the scope of the present claims so as to produce desired end results.

10. In reference to the product-by-process limitations of claims 12 and 13, it is noted that Albert exemplifies sieving the microcapsule slurry prior to mixing with the aqueous solution (Example 1, col. 24, lines 22-23). Wherein it is well known in the art that sieving is utilized to size particles. Thus the reference is suggesting a type of wet-sizing process (wet classification). It would have been

obvious to one of ordinary skill in the art at the time of the inventing to sieve the microcapsule slurry prior to mixing with the aqueous solution, as per the suggestion of Albert, in order to obtained a desired size distribution.

11. Additionally, it is the examiner's position that the product of Albert appears to be the same or similar to that claimed, although produced by a different process. Specifically, since the electrophoretic particles, suspending fluid and aqueous binder of Albert correspond to those claimed and provided in the specification, it is clear that the resulting microcapsule composition of Albert is the same or similar to that claimed.

12. The examiner has provided a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi,* 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

13. Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (US 2001/0046081) in view of Liang et al. (US 2002/0131152).

14. Hayashi discloses a display element (electrophoretic display) comprising a microcapsule composition (abstract). The microcapsule composition comprises microcapsules and an aqueous solution [0188]. The microcapsules comprise a dispersed system sealed in the microcapsule, wherein the dispersed system comprises electrophoretic particles dispersed in dielectric liquid. The dielectric liquid includes solvents [0168-0170]. Wherein the microcapsules and aqueous solution comprise 100% of the microcapsule composition [0188].

15. The microcapsules have a diameter of about 25 μm, and a shell film thickness of about 5 μm [00179]. Wherein the term about allows permits some tolerances, thus about 25 μm is considered to read on 30μm.

16. Hayashi fails to disclose two limitations, the weight percent of microcapsules present in the microcapsule composition and the size distribution of the microcapsules.

17. In reference to the weight percent of microcapsules present in the microcapsule composition, it is the examiner's position that depending on the desired outcome of the electrophoretic display, one of ordinary skill in the art would readily be capable of modifying the weight percent of microcapsules present in the composition in order to obtain enhanced optical characteristics.

18. The Hayashi reference fails to explicitly disclose the exact values of the particle distribution by volume, as claimed. Hence attention is directed towards the Liang et al. reference, which teaches that the size distribution of the microcapsules of the prior art are broad, resulting in poor resolution and addressability for color applications [0007]. Thus, it would have been obvious to one of ordinary skill in the art to narrow the microcapsule size distribution of Hayashi in order to improve the resolution and addressability for color applications in electrophoretic displays. Wherein it would have been obvious to one of ordinary skill in the art to optimize the size distribution; it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

19. Clearly, Ling et al. recognizes the size distribution of microcapsules in electrophoretic displays as a result effective variable because changing it will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617

F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to modify the particle diameter distribution by volume to values within the scope of the present claims so as to produce desired end results.

20. In reference to the product-by-process limitations of claims 12 and 13, it is the examiner's position that the product of Hayashi appears to be the same or similar to that claimed, although produced by a different process. Specifically, since the electrophoretic particles, suspending fluid and aqueous binder of Hayashi correspond to those claimed and provided in the specification, it is clear that the resulting microcapsule composition of Hayashi is the same or similar to that claimed.

21. The examiner has provided a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi,* 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

***Response to Arguments***

22. Applicant's arguments filed 1/11/2007 have been fully considered but they are not persuasive. Applicants' have argued that the process limitations included in the product claims is a feature that defines the properties and characteristics of the microcapsules. However, applicants have not provided evidence that there is an unobvious difference between the claimed product and that of the prior art. Applicants have merely alleged that a difference exists. Applicants have alleged that the process of Albert involves dry classification, however, the examiner is unable to locate this disclosure. Thus, in the absence of evidence of unobviousness, the examiner maintains the position that the products of the prior art are substantially identical to the claimed product.

23. Applicants have alleged unexpected results via the wet classification of the microcapsules, applicants have directed attention to Comparative Example 1 and Example 1 of the specification. The examiner has reviewed the examples and concludes that the examples merely identify differences in wet and dry processing; however, the references do not refer to either type of processing. Rather the examiner has made an obviousness rejection, stating that it would have been obvious to control the size distribution of particles, in order to optimize the function of the electrophoretic display. It is noted that the applied references do not disclose the formation of aggregates or a large amount of damaged microcapsules, thus it appears that products of the prior art are substantially identical to the claimed product.

***Conclusion***

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

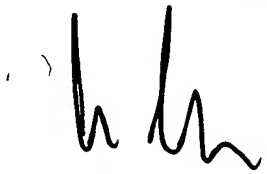
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saira Haider whose telephone number is (571) 272-3553. The examiner can normally be reached on Monday-Friday from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Saira Haider
Examiner
Art Unit 1711



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